



# Twittering with Python

Python libraries for the Twitter API:  
Overview and applications

**EuroPython 2009 (June 30th 2009, Birmingham)**

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PowerPoint  
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**[twitter.com/python\\_demo](https://twitter.com/python_demo)**

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**<http://tr.im/ep09tw>**

# What is Twitter?



## Micro-Blogging Service

- Users can send text messages
- Users can receive text messages of others
- Text messages can have up to 140 characters
- The text messages are called „Updates“ or „Tweets“

## Social Network

- One can subscribe to other users („Following“)
- Subscriber of own updates are „Follower“
- On the Twitter web site one can enter updates and ...
- See updates of all Friends
- Users can control visibility

<http://en.wikipedia.org/wiki/Twitter>



# History of My Blog

2005:

art! ideas! poetry!  
tech! architecture!  
business! science!  
internet!



2006:

google! yahoo!  
techcrunch! flickr!  
youtube! web 2.0!  
blogs!



2007:

twitter! twitter!  
twitter! twitter!  
twitter! twitter!  
twitter!



©hugh







# Who twitters?

## **Persons (private persons, „Celebrities“, politicians, ...)**

- Guido van Rossum, Ian Foster, Al Gore, Barack Obama, William Shatner

## **Research centers & universities**

- DLR, ESA, NASA, Fraunhofer, DHBW Mannheim, FH Köln, Cardiff Uni.

## **Companies (publishers, IT companies, Dienstleister, ...)**

- O'Reilly, Heise, Sun Microsystems, Google, XING, Starbucks, Bahn

## **Software projects & products**

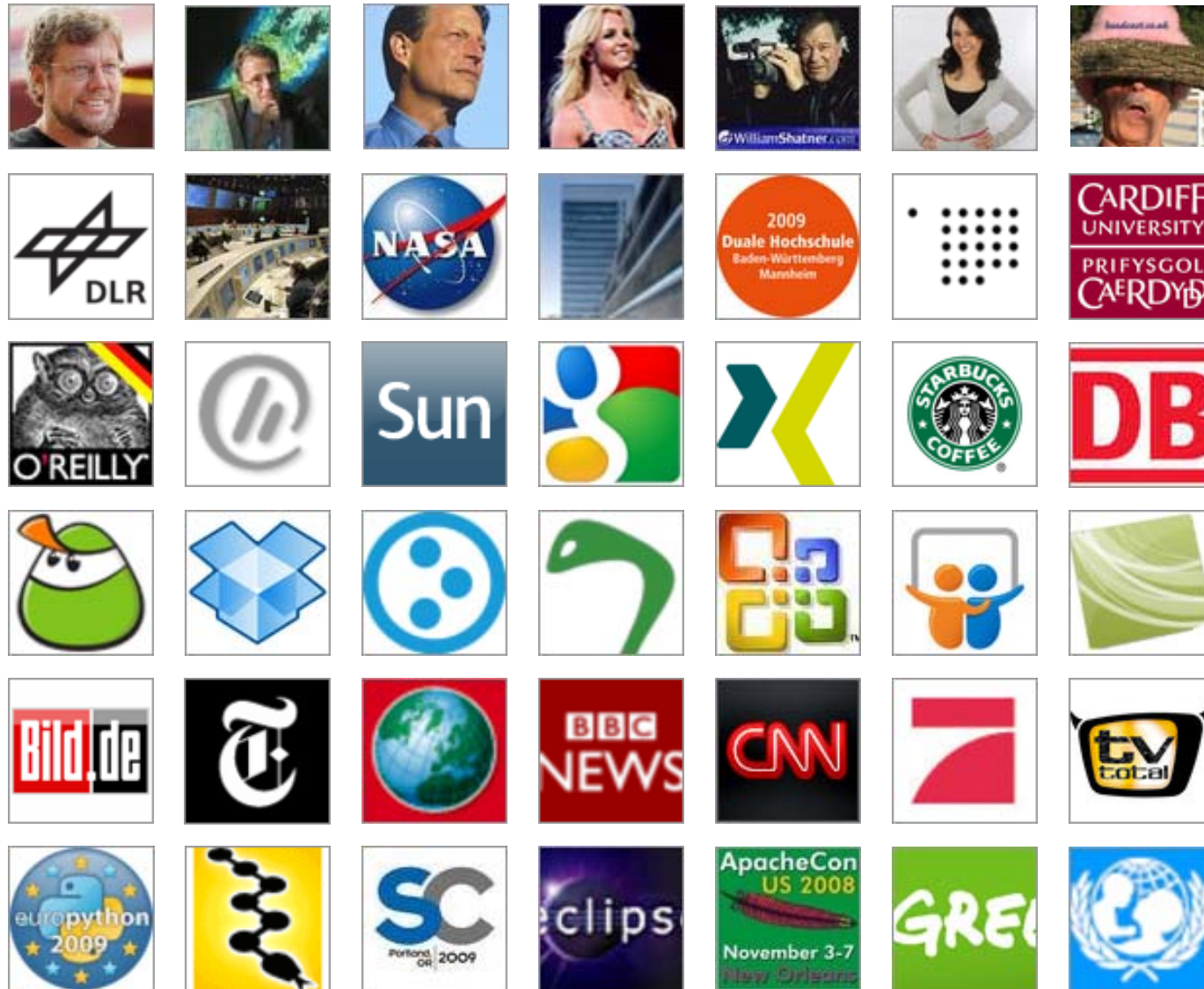
- Digsby, Dropbox, Plone, Jython, SharePoint, SlideShare, Camtasia

## **Media (Newspapers, TV stations, TV shows, ...)**

- Bild, The Times, Focus, ZEIT, BBC, CNN, Pro7, TV Total

## **Conferences and organizations**

- EuroPython, PyCon, Supercomputing, EclipseCon, Greenpeace





**gvanrossum**

▶ **Following** Device updates OFF

@iamtef Well if you watch the video that's what Beazley proposes. :)

*about 9 hours ago from web in reply to iamtef*

@sixohsix Your "Threads are an evil construct" sounds like religion to me. Go watch the video. <http://blip.tv/file/2232410>

*about 13 hours ago from web in reply to sixohsix*

My IronPython in Action book review became a bit of a M\$ rant... <http://tinyurl.com/n285xw> (Sorry @voidspace :-)

*about 15 hours ago from web*

Who wants to \*fix\* the GIL for multi-core use? (NOT remove it.) Start with Dave Beazley's amazing preso - <http://blip.tv/file/2232410>

*about 16 hours ago from web*

Bruce Eckel: Language Archaeology and Metaprogramming. <http://bit.ly/TBCbJ> #europython

*6:03 AM Jun 24th from web*

Listened to Tracy Chapman's first album again today. Made me cry. Wow. ( <http://bit.ly/bLYhF> )

*3:27 AM Jun 22nd from web*

Typical Friday afternoon occurrence: happily in the zone, debugging new code, just before it's working it's time to head to the train...

**Name** Guido van Rossum  
**Location** San Francisco Bay Area  
**Web** <http://python.org...>  
**Bio** Creator of Python

153 following 4,434 followers

**Updates** 167

[Favorites](#)

[Actions](#)

[block gvanrossum](#)

[Following](#)



[View All...](#)

[RSS feed of gvanrossum's updates](#)





**DLR\_de**

Following Device updates OFF

@smatthes Entschuldigung für's  
später Zwitschern. Spätestens am  
20.9. gibt es zum Tag der Luft- und  
Raumfahrt die nächste Chance.  
#TdLR2009

about 17 hours ago from TwitterFox in reply to smatthes

RT @big\_picture Recent scenes from the ISS <http://tinyurl.com/mn9ony> #BigPicture #beautiful #big #AuroraAustralis

about 17 hours ago from TwitterFox

Heute Abend in #Köln: Besucht @DLR\_de während der "Nacht der  
Technik" <http://bit.ly/QvJRr> <http://bit.ly/QD9TK> Karte: <http://bit.ly/DLR-koeln>

about 18 hours ago from TwitterFox

Flüster-Flieger: Bericht von @sueddeutsche mit Video und  
Bildergalerie über Brennstoffzellen-Flieger Antares DLR-H2  
<http://bit.ly/R3cJs>

about 19 hours ago from TwitterFox

Video zur Raumfahrt-Industrie von der Paris Air Show <http://bit.ly/lj3zl> #LeBourget #EuroNews #8min #Raumfahrt

about 19 hours ago from TwitterFox

"An der Speichertechnik müssen wir noch arbeiten", sagt Franz  
Trieb im Interview mit den VDI nachrichten <http://bit.ly/xnKu3>

Name DLR\_de

Location Köln / Cologne,  
Germany

Web <http://www.dlr.de>

Bio Deutsches Zentrum für  
Luft- und Raumfahrt (DLR) -  
German Aerospace Center

441 577  
following followers

Updates 671

Favorites

Actions

message DLR\_de  
block DLR\_de

Following



View All...

RSS feed of DLR\_de's updates



# plone

▶ **Following** - Device updates OFF

Lukasz Lakomy: Adding dynatree with checkboxes to a form: Learn how to combine dynatree (javascript tree widget).. <http://tinyurl.com/nacnyh>

*about 13 hours ago from twitterfeed*

Jazkarta Blog: Jazkarta cooks up a new Plone site for Oxfam America: May I borrow that ? Or building on the work..  
<http://tinyurl.com/nme89a>

*about 13 hours ago from twitterfeed*

Immersive Training: What do I need to know to attend the Immersive Training?: We've had a lot of questions from ...  
<http://tinyurl.com/kocame>

*11:46 PM Jun 25th from twitterfeed*

Francesco Ciriaci: 10 characteristics of a salesman: I am back from a discussion with (master) Dedalo Pfiffer, p..  
<http://tinyurl.com/nkrt3w>

*11:45 PM Jun 25th from twitterfeed*

Immersive Training: Why An Immersive Training? So The Madeleine Can Fight the Devil.: "Should I stay or should I..  
<http://tinyurl.com/nw5jbc>

*3:19 AM Jun 25th from twitterfeed*

**Name** The Open Source CMS

**Location** on the internets

**Web** <http://plone.org>

**Bio** Plone is an open source content management system based on the scripting language Python. It supports Workflows, easy versioning, AJAX editing and much more.

234 975  
following followers

**Updates** 3,238

Favorites


Actions

block plone

Following



[View All...](#)

 [RSS feed of plone's updates](#)





**pypi**

Follow

importwatcher 0.1.0: import watcher for python modules <http://tinyurl.com/qcdu8>

*about 6 hours ago from twitterfeed*

medialog.subskinsiii 1.7b3: An installable theme for Plone 3.0  
<http://tinyurl.com/qjlkwx>

*about 9 hours ago from twitterfeed*

medialog.subskinsiii 1.7b1: An installable theme for Plone 3.0  
<http://tinyurl.com/qhbezv>

*about 10 hours ago from twitterfeed*

lepton 1.0b1: Lepton: A high-performance, pluggable particle engine and API for Python <http://tinyurl.com/qb3wew>

*about 11 hours ago from twitterfeed*

wordaxe 0.3.3: Provide hyphenation for python programs and ReportLab paragraphs. <http://tinyurl.com/otqvkk>

*about 12 hours ago from twitterfeed*

bootalchemy 0.1.5: A package to create database entries from yaml using sqlalchemy. <http://tinyurl.com/l5gadl>

*about 12 hours ago from twitterfeed*

couchdbkit 0.1.7.1: Python couchdb kit <http://tinyurl.com/rypgnq>

*about 12 hours ago from twitterfeed*

**Name** Python Package Index

217 following 434 followers

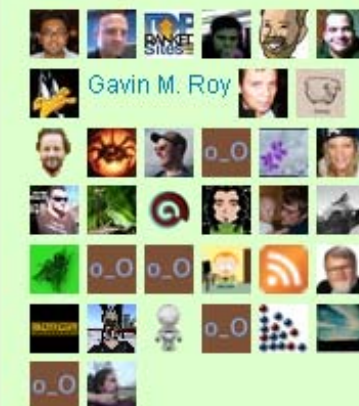
**Updates** 4,048

[Favorites](#)

[Actions](#)

[message](#) pypi  
[block](#) pypi

[Following](#)



[View All...](#)

 [RSS feed of pypi's updates](#)



# bbcbreaking

[Follow](#)

Pop star Michael Jackson has died after being rushed to hospital in Los Angeles, according to US media reports <http://www.bbc.co.uk/news>

*1:00 AM Jun 26th from twitterfeed*

Pop star Michael Jackson is in hospital in Los Angeles and was given CPR after he stopped breathing, reports say <http://www.bbc.co.uk/news>

*11:35 PM Jun 25th from twitterfeed*

US actress Farrah Fawcett, famous for her role in TV show Charlie's Angels, has died of cancer at 62. <http://www.bbc.co.uk/news>

*6:55 PM Jun 25th from twitterfeed*

At least 55 people are killed in a bomb blast in a market in the Iraqi capital, Baghdad, officials say. <http://www.bbc.co.uk/news>

*7:55 PM Jun 24th from twitterfeed*

UK expels two Iranian diplomats in response to Iran's expulsion of two British envoys. <http://www.bbc.co.uk/news>

*4:50 PM Jun 23rd from twitterfeed*

Conservative MP John Bercow is elected as the new Speaker of the House of Commons, following the resignation of .. <http://www.bbc.co.uk/news>

*0:25 PM Jun 22nd from twitterfeed*

**Name** BBC Breaking News

**Location** London, UK

**Web** [http://menti.net/...](http://menti.net/)

**Bio** Breaking news alerts from the BBC. Supported by backstage.bbc.co.uk

1 following\_profile 135,160 followers\_profile

**Updates** 892


[Favorites](#)

[Actions](#)

[block bbcbreaking](#)

[Following](#)



 [RSS feed of bbcbreaking's updates](#)





# europython

▶ **Following** ✓ Device updates ON

last preps, flight to Birmingham at 1 PM CET. See you on the venue! from @llanga

*about 4 hours ago from web*

Saturday social is at the Zagora, see <http://wiki.europython.eu/S...> Tried it tonight. good :- ) from @JohnPinner

*about 11 hours ago from web*

rumours that EuroPython to be canceled in memory of Michael Jackson are untrue. @JohnPinner emotional but determined to go o from @voidspace

*1:21 AM Jun 26th from web*

I'll show you my python, if you show me yours. from @ciaranmooney

*5:55 PM Jun 25th from web*

see you there! :) from @davidradkowski

*10:15 PM Jun 24th from web*

Cornish pasties and refrigerated transport from Padstow to Brum all organised from @JohnPinner

*7:47 PM Jun 24th from web*

The weather this week in Birmingham may be <http://bit.ly/zy2qh> , but next week there is a possibility of showers. from @arestis

*6:40 PM Jun 24th from web*

**Name** europython

**Location** Birmingham, UK

**Web** <http://europython.eu>

**Bio** The EuroPython Python Language Conference

68 following 235 followers

**Updates** 53

[Favorites](#)

**Actions**

[message](#) europython

[block](#) europython

**Following**



[View All...](#)

 [RSS feed of europython's updates](#)



# SuperComputing

▶ **Following** Device updates OFF

SC09 conference and housing registration sites are now open. Book your hotel rooms early to get the location you want. <http://is.gd/12ECZ>

7:59 PM Jun 15th from web

Register now for SC Summer Education Workshops: <http://sc09.sc-education.org...>

10:42 PM Jun 9th from web

A new video brings Home why sustainability is so much more than just a theme for SC09: <http://is.gd/R2yp>

4:32 AM Jun 7th from web

Latest SC09 Newsletter is out: <http://blogs.sun.com/HPC/re...>

10:30 PM May 21st from web

Podcast: Getting the Most out of SC09: <http://bit.ly/11XezN>

12:06 AM May 7th from web

AI Gore to keynote SC09: <http://insidehpc.com/2009/0...>

4:09 PM Apr 27th from web

Read the latest SC09 newsletter: <http://blogs.sun.com/HPC/re...>

12:50 AM Apr 23rd from web

SC09 Tech Program Submissions Deadline Extended:

**Name** SC09 Tweets Here

**Location** Portland, Oregon

**Web** <http://sc09.super...>

**Bio** The Official Twitter page for the SC09 conference, November 2009 in Portland.

309 following 357 followers

**Updates** 19

[Favorites](#)

**Actions**

[message](#) SuperComputing  
[block](#) SuperComputing

**Following**



[View All...](#)

[RSS feed of SuperComputing's updates](#)

# Web Sites and Technologies

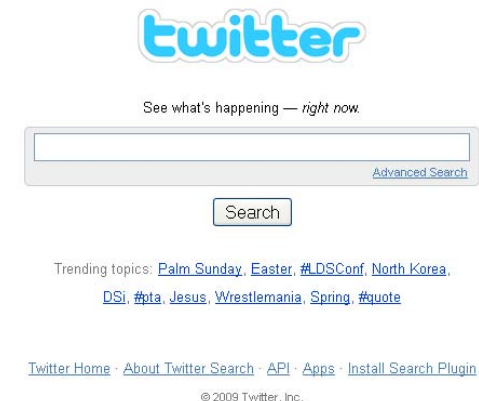
<http://twitter.com>

- Web application developed with Ruby on Rails
- Message Queue Server **Kestrel** (fka. Starling) developed in Scala
  - Available under Apache 2.0 License
  - <http://github.com/robey/kestrel/tree/master>



<http://search.twitter.com>

- Originally develop by *Summize*
- Real time search over Twitter-XMPP-Stream
- Requests with Atom and JSON:  
<http://search.twitter.com/search.atom?q=<query>>  
<http://search.twitter.com/search.json?q=<query>>



# Twitter Basics (1)

## Tweet

- A Post (message, update) at Twitter
- Max. 140 Characters (incl. white space), only text

What are you doing?

116

Latest: Just added myself to the <http://wefollow.com> twitter directory under: [#python](#) [#programming](#) [#cologne](#) 11 days ago

update

## Timeline

- History of the latest updates
- „Public Timeline“:  
Updates of all users („Everyone“)

What are you doing?

140

Latest: Just added myself to the <http://wefollow.com> twitter directory under: [#python](#) [#programming](#) [#cologne](#) 11 days ago

update

o\_O **rwadle** Rafsky lost  
less than 5 seconds ago from txt

**fevaviarouche** Raissa eh tao saliente  
less than 5 seconds ago from web

**yuuuuki\_snow** @fjixfiji 5wwwwwwwwww  
less than 5 seconds ago from movatwitter in reply to fjixfiji

**LaurelHarper** @BLangerfeldt It was GREAT meeting you at the @RheaPerry event. You traveled all the way from Chile to Alabama - wow!  
less than 5 seconds ago from web in reply to BLangerfeldt

**Heathtastic2006** walking to ge then out with megan til i gotta work at 5 =]  
less than 5 seconds ago from txt

**ndonegan** @mneylon What's the problem then? You'd fit right in!  
less than 5 seconds ago from Twirssi

**pycologne**

4 following | 11 followers | 1 updates

**Twistori**  
an ongoing and hypnotic social experiment.

Home

@pycologne

Direct Messages 0

**Everyone**

Followed

Device Updates  
Set up SMS updates

RSS feed of everyone's updates



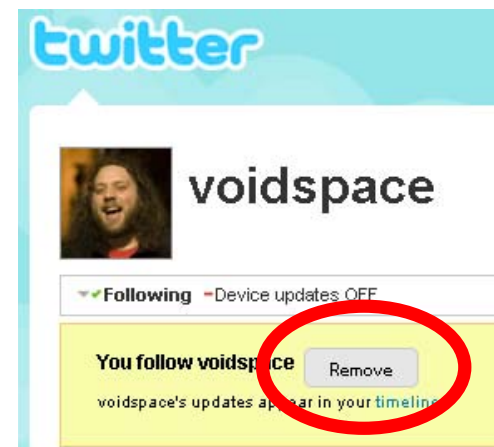
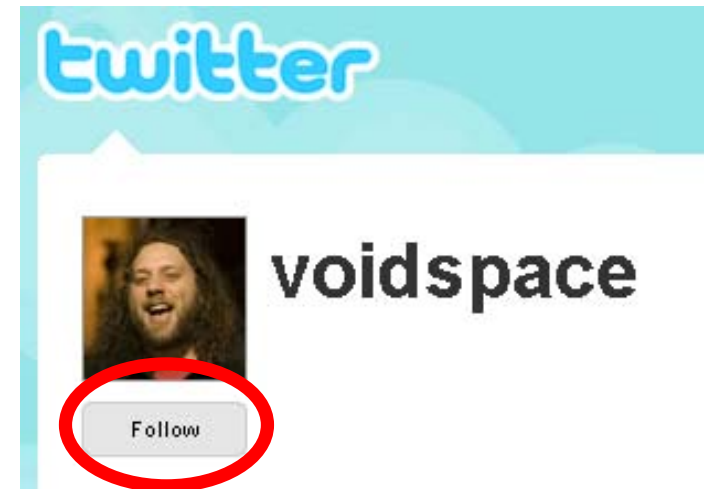
## Twitter Basics (2)

### Follow

- Selection of „**Friends**“ for your own timeline („Stream“)
- „**Followers**“ are following your own updates

### Personal Page

- You own Timeline
- Status information



# Twitter Basics (3)

## Replies

- Response to an other user
- To reply, add „@username“ to the message
- Replies can be from your „Friends“ or any other user

@andialbrecht findest du nicht, dass @onyame gerade eine sehr gute Idee hatte? :)

8:10 PM Mar 31st from TweetDeck



mbrochh  
Martin Brochhaus

## Direct Messages


- Private messages
- Can be sent to your “Follower” only, not to “Friends”

Send  a direct message. 140

send

Inbox Sent

**Direct Messages You've Sent**

 **ArneBachmann** Danke danke!!  
2:04 PM Jan 6th

## Retweets

- „Forward“ of interesting updates to own friends
- Usually, Retweets starts with a „RT“



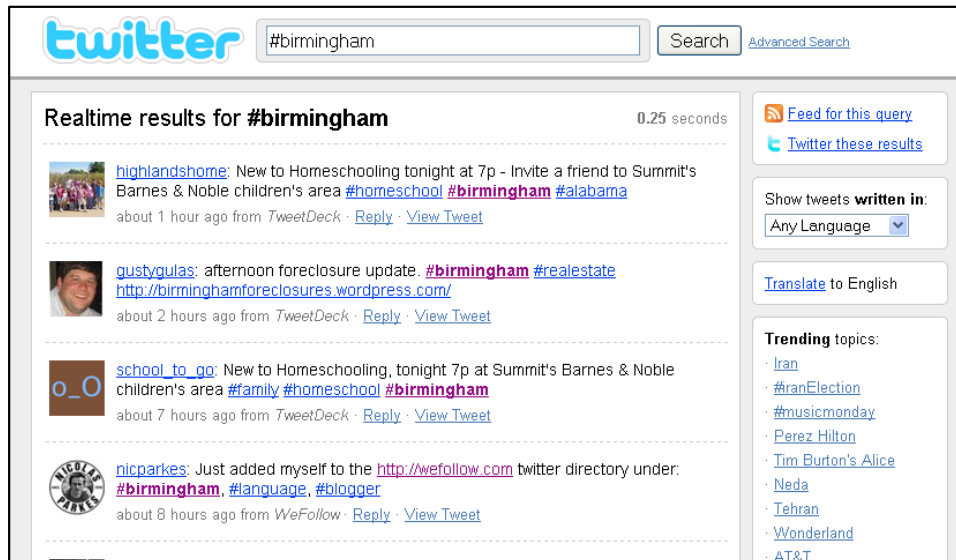
# Hash tags

## Hash tags in Twitter messages

- Begins with a hash „#“
- Often used for events, cities, countries, ...

## Examples

#birmingham



Realtime results for **#birmingham** 0.25 seconds

[Feed for this query](#)  
[Twitter these results](#)

Show tweets written in:  
Any Language

[Translate to English](#)

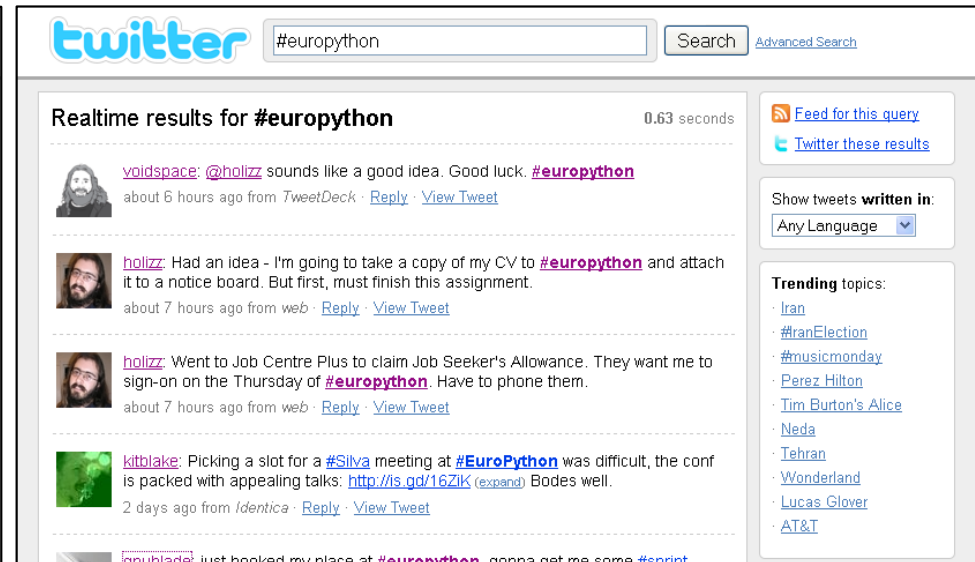
**Trending topics:**

- Iran
- #IranElection
- #musicmonday
- Perez Hilton
- Tim Burton's Alice
- Neda
- Tehran
- Wonderland
- AT&T

**Search results:**

- highlandshome:** New to Homeschooling tonight at 7p - Invite a friend to Summit's Barnes & Noble children's area [#homeschool](#) [#birmingham](#) [#alabama](#)  
about 1 hour ago from *TweetDeck* · [Reply](#) · [View Tweet](#)
- gustygulas:** afternoon foreclosure update. [#birmingham](#) [#realestate](#)  
<http://birminghamforeclosures.wordpress.com/>  
about 2 hours ago from *TweetDeck* · [Reply](#) · [View Tweet](#)
- o\_o** [school\\_to\\_go](#): New to Homeschooling, tonight 7p at Summit's Barnes & Noble children's area [#family](#) [#homeschool](#) [#birmingham](#)  
about 7 hours ago from *TweetDeck* · [Reply](#) · [View Tweet](#)
- nicparkes:** Just added myself to the <http://wefollow.com> twitter directory under: [#birmingham](#), [#language](#), [#blogger](#)  
about 8 hours ago from *WeFollow* · [Reply](#) · [View Tweet](#)

#europython



Realtime results for **#europython** 0.63 seconds

[Feed for this query](#)  
[Twitter these results](#)

Show tweets written in:  
Any Language

**Trending topics:**

- Iran
- #IranElection
- #musicmonday
- Perez Hilton
- Tim Burton's Alice
- Neda
- Tehran
- Wonderland
- Lucas Glover
- AT&T

**Search results:**

- voidspace:** [@holizz](#) sounds like a good idea. Good luck. [#europython](#)  
about 6 hours ago from *TweetDeck* · [Reply](#) · [View Tweet](#)
- holizz:** Had an idea - I'm going to take a copy of my CV to [#europython](#) and attach it to a notice board. But first, must finish this assignment.  
about 7 hours ago from *web* · [Reply](#) · [View Tweet](#)
- holizz:** Went to Job Centre Plus to claim Job Seeker's Allowance. They want me to sign-on on the Thursday of [#europython](#). Have to phone them.  
about 7 hours ago from *web* · [Reply](#) · [View Tweet](#)
- kitblake:** Picking a slot for a [#Silva](#) meeting at [#EuroPython](#) was difficult, the conf is packed with appealing talks: <http://is.gd/16ZIK> (expand) Bodes well.  
2 days ago from *Identica* · [Reply](#) · [View Tweet](#)
- fnubladet:** just booked my place at [#europython](#) gonna get me some [#sprint](#)

# Twitter Applications

## Web applications

## Native Clients

- Windows, Mac OS X, Linux
- iPod/iPhone
- Smartphones

## Integration in existing applications

- Instant Messenger
- Social Networking Services

## See list at

<http://twitter.pbwiki.com/Apps>



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# Twitter API



# Twitter API

## REST-based API

- HTTP-Requests
- Data formats: XML, JSON, RSS, Atom
- Authentication with OAuth or HTTP Basic Authentication
- Error messages are provided (e.g., in XML):

```
<?xml version="1.0" encoding="UTF-8"?>
<hash>
  <request>/direct_messages/destroy/456.xml</request>
  <error>No direct message with that ID found.</error>
</hash>
```

- Limitation: Max. 100 Requests in 60 minutes per client
  - Based on: IP (unauthorized) or User ID (authorized)

**Documentation:** <http://apiwiki.twitter.com>



# API Methods (1)

## Status Methods

- public\_timeline
- friends\_timeline
- user\_timeline
- show
- update
- replies
- destroy

## Account Methods

- verify\_credentials
- end\_session
- archive
- update\_location
- update\_delivery\_device

## User Methods

- friends
- followers
- featured
- show

## Direct Message Methods

- direct\_messages
- sent
- new
- destroy

## Friendship Methods:

- create
- destroy
- exists



# API Methods (2)

## Favorite Methods

- favorites
- create
- destroy

## Help Methods

- test
- downtime\_schedule

## Notification Methods

- follow
- leave

## Block Methods

- create
- destroy



# Authentication

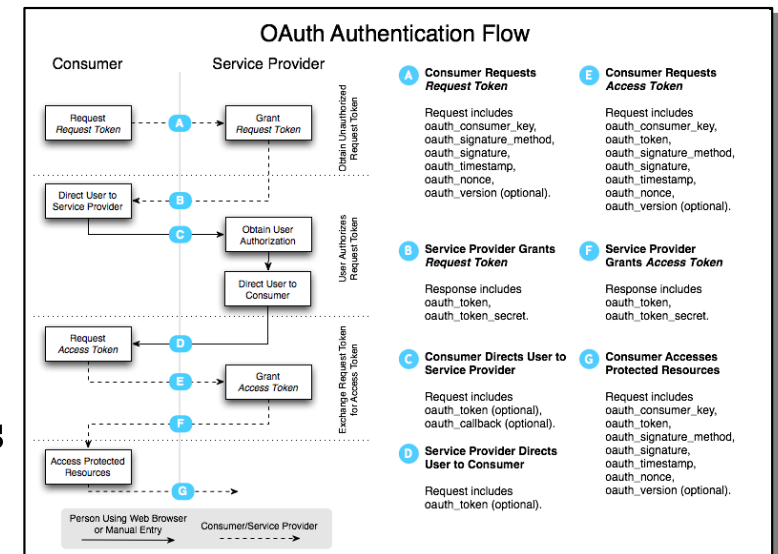
## Two Techniques to Authenticate with the REST API

### Basic Auth

- Sends user credentials in the header of the HTTP request
- Easy to use, but insecure and difficult to track

### OAuth

- Token-passing mechanism
- Allows users to control which application have access to their data without giving away their passwords
- Specification: <http://oauth.net>
- Registration of clients: [http://twitter.com/oauth\\_clients](http://twitter.com/oauth_clients)



<http://oauth.net/core/1.0/>





# Twitter API: Getting Started (1)

## Public Timeline

### Getting the Public Timeline (last 20 entries)

➤ As RSS

```
curl http://twitter.com/statuses/public_timeline.rss
```

➤ As JSON

```
curl http://twitter.com/statuses/public_timeline.json
```

➤ As XML

```
curl http://twitter.com/statuses/public_timeline.xml
```



# Twitter API: Getting Started (2)

## Timeline of your own „Friends“

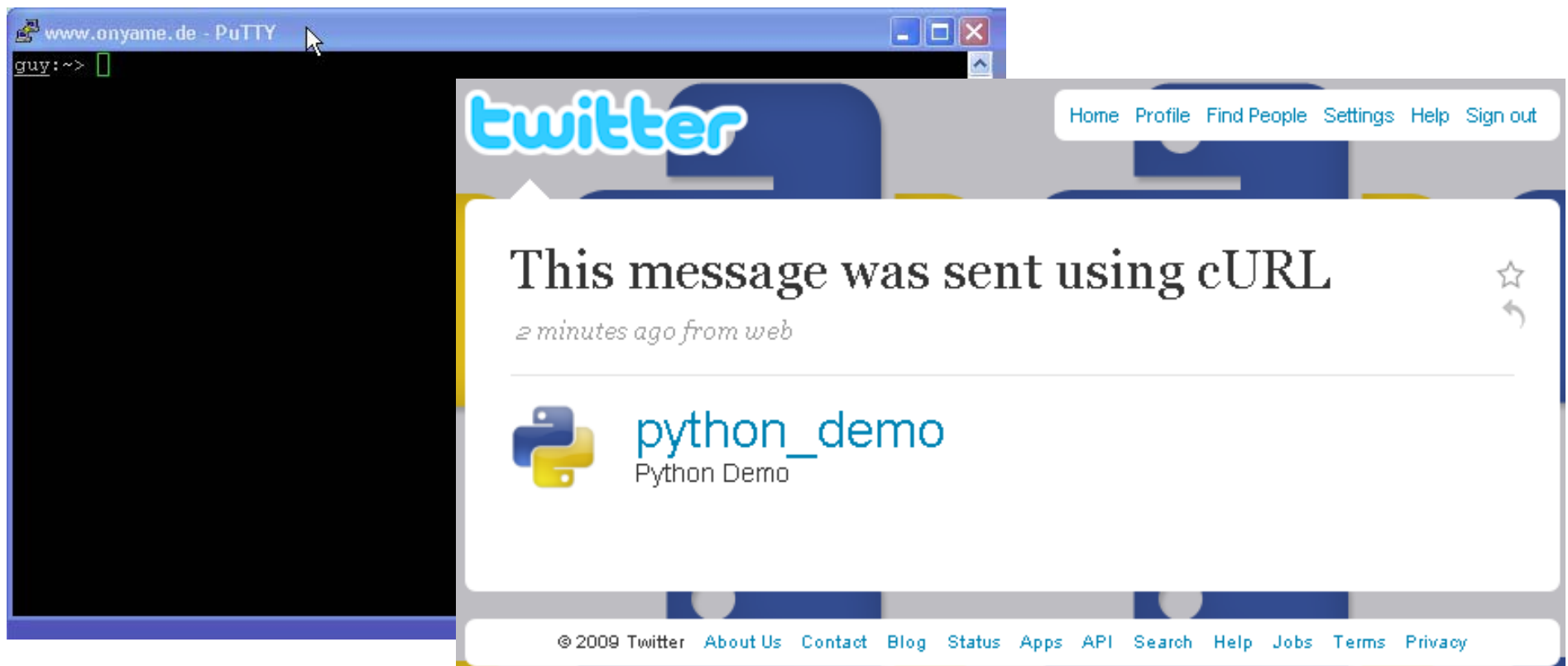
```
curl -u python_demo:***  
http://twitter.com/statuses/friends_timeline.xml
```



# Twitter API: Getting Started (3)

## Posting of „Updates“

```
curl -u python_demo:****  
-d status="This message was sent using cURL"  
http://twitter.com/statuses/update.json
```







# Libraries

**List of libraries:** <http://apiwiki.twitter.com/Libraries>

- ActionScript / Flash
- C++
- C#/.NET
- Java
- Objective-C/Cocoa
- Perl
- PHP
- PL/SQL
- Python
- Ruby
- Scala

# Twitter Libraries in Python

## Four Implementations

**python-twitter** by DeWitt Clinton.

*This library provides a pure Python interface for the Twitter API.*

**python-twyd** by Andrew Price.

*BSD licensed Twitter API interface library and command line client.*

**twitty-twister** by Dustin Sallings.

*A Twisted interface to Twitter.*

**Python Twitter Tools (PTT)** by Mike Verdone.

*A Twitter API, command-line tool, and IRC bot.*



# python-twitter

## Pure Python Interface for the Twitter API

### Project information

- Project site:  
`http://code.google.com/p/python-twitter`
- Author: DeWitt Clinton (Google; <http://unto.net>)
- Apache License 2.0



### Provided functionality

- Supported Methods: Status, User, Direct message
- Authentication: Basic Auth
- Provides a Python wrapper around the Twitter API and data model

### Requirements

- simplejson (<http://cheeseshop.python.org/pypi/simplejson>)





# python-twitter

## API and Data Model

### API

- Class `twitter.Api`

```
import twitter
# without authentication
api = twitter.Api()
# with authentication
api = twitter.Api(username='username', password='password')
```

### Data model

- Three model classes: `twitter.Status`, `twitter.User`, and `twitter.DirectMessage`
- API method return instances of these classes

```
statuses = api.GetPublicTimeline()
users = api.GetFriends()
```

# Twyt

A Twitter API interface for Python



## Project information

- Project site:  
`http://andrewprice.me.uk/projects/twyt`
- Author: Andrew Price
- BSD License



## Provided functionality

- Supported Methods: Status, User, Direct Message, Friendship, Social Graph, Block
- Authentication: Basic Auth, OAuth

## Requirements

- simplejson (<http://cheeseshop.python.org/pypi/simplejson>)



# Twyt

## API and Data Model

### API

- Class `twyt.twitter.Twitter`, methods return JSON

```
from twyt import twitter, data
api = twitter.Twitter()
# authenticate
api.set_auth('username', 'password')
```

### Data model

- Model classes in module `twyt.data`: `User`, `Status`, `DirectMsg`, `StatusList`, `DirectList`, `RateLimit`
- Provides easy access to JSON data

```
timeline = api.status_public_timeline()
statuses = data.StatusList(timeline)
print statuses[0].user.name, statuses[0].text
```

# twitty-twister

A Twisted interface to Twitter

## Project information

- Project site:  
`http://github.com/dustin/twitty-twister/tree/master`
- Author: Dustin Sallings
- License: ?



## Provided functionality

- Supported methods: Status, User, Direct message, Friendship
- Authentication: Basic Auth, OAuth

## Requirements

- Twisted (<http://twistedmatrix.com>)







# twitty-twister

## API and Data Model

### API

- Class `twitter.Twitter`, with Basic or OAuth authentication

```
from twisted.internet import reactor,  
                                protocol, defer, task  
import twitter  
api = twitter.Twitter('username', 'password')
```

### Data model

- Module `txml` parses XML and provides access classes: `Author`, `Entry`, `Status`, `User`, `DirectMessage`
- Callback functions can be used.



# twitty-twister

## Example

### ➤ Get public timeline

```
def gotEntry(msg):  
    print "Message from %s: %s" % (msg.author.name, msg.title)  
  
api.public_timeline(gotEntry).addBoth(lambda x: reactor.stop())  
reactor.run()
```

### ➤ Update („post message“)

```
def callback(x):  
    print "Posted id", x  
def errorback(e):  
    print e  
  
api.update('text').addCallback(cb).addErrback(eb).  
    addBoth(lambda x: reactor.stop())  
reactor.run()
```

# Python Twitter Tools (PTT)

python twitter tools  
*lean. sweet. tweet.*

Twitter API, command-line tool, and IRC bot

## Project information

- Project site: <http://mike.verdone.ca/twitter>
- Author: Mike Verdone
- MIT License



## Provided functionality

- Supported methods: status, user, direct message
- Authentication: Basic Auth
- IRC bot that can announce Twitter updates to an IRC channel

## Requirements

- irclib (<http://python-irclib.sourceforge.net>)
- simplejson (<http://cheeseshop.python.org/pypi/simplejson>)





# Python Twitter Tools (PTT)

## API and Data Model

### API

- Class `twitter.api.Twitter`, with Basic Auth

```
import twitter.api
# without authentication
api = twitter.api.Twitter()
# with authentication
api = twitter.api.Twitter('username', 'password')
```

### Data model

- Class `TwitterCall` generates dynamics calls and returns decoded JSON (as Python lists, dicts, ints, strings)
- Data in XML format

```
api = twitter.api.Twitter(format="XML")
```



# Python Twitter Tools (PTT)

## Example

### ➤ Get public timeline

```
timeline = api.statuses.public_timeline()  
  
print timeline[0]['user']['screen_name']  
print timeline[0]['text']
```

### ➤ Get friends timeline

```
# two types of invocation possible:  
api.statuses.friends_timeline(id='europython')  
api.statuses.friends_timeline.europython()
```

### ➤ Update („post message“)

```
api.statuses.update(status='message')
```



# Comparison

## Python Twitter Libraries

Library	Supported API Methods	Supported Authentication	Requirements
<b>Python-twitter</b>	Status, User, Direct message	Basic Auth	simplejson
<b>Twyt</b>	Status, User, Direct Message, Friendship, Social Graph, Block	Basic Auth, OAuth	simplejson
<b>Twitty-twister</b>	Status, User, Direct message, Friendship	Basic Auth, OAuth	Twisted
<b>Python Twitter Tools</b>	Status, User, Direct message	Basic Auth	simplejson, (ircLib)



# Examples and Demos





## Example

### Get all Updates of a User

```
import twitter

api = twitter.Api()

statuses = api.GetUserTimeline('DLR_de')
print [s.text for s in statuses[:5]]
```

[u"Video: @NASA's SOFIA mission update <http://tinyurl.com/cmmna3>  
#SOFIA (Stratospheric Observatory For Infrared Astronomy)", u'Video  
zur GOCE-Mission (Messung der Schwerkraft) <http://tinyurl.com/c5zhdb>  
#euronews', u'(EN) Now following @ESAGermany and @ESAGOCE',  
u'@AndreasSchepers Gute Frage. Immerhin hat die NASA-Mission  
keinen Vornamen. #Johannes #ATV #NASA', u'RT @AndreasSchepers  
Thomas Reiter: Wir wissen mehr \xf6ber den Mars als den Mond.  
<http://is.gd/k7qZ> #Mp3 #DeutschlandRadioKultur #DLR-Vorstand']



# Example

## Posting an Update

```
import twitter

api = twitter.Api(username='python_demo',
                  password=
                  )

api.PostUpdate('Moin!')
```



# Example

## Adding a Friend („Follow“)

```
import twitter
api = twitter.Api(username='python_demo', password='***')

user = api.CreateFriendship('pycologne')
print user
```

{"description": "Python User Group Cologne, Germany", "name": "PyCologne", "http://s3.amazonaws.com/twitter\_production/pycologne\_logo\_small\_quadratisch\_normiert.png", "pycologne", "url": "http://www.pycologne.org"}



# Example

## „tail -f“ to Twitter

```
# based on http://code.activestate.com/recipes/157035/
import time, os

import twitter
api = twitter.Api(username='python_demo', password='*')

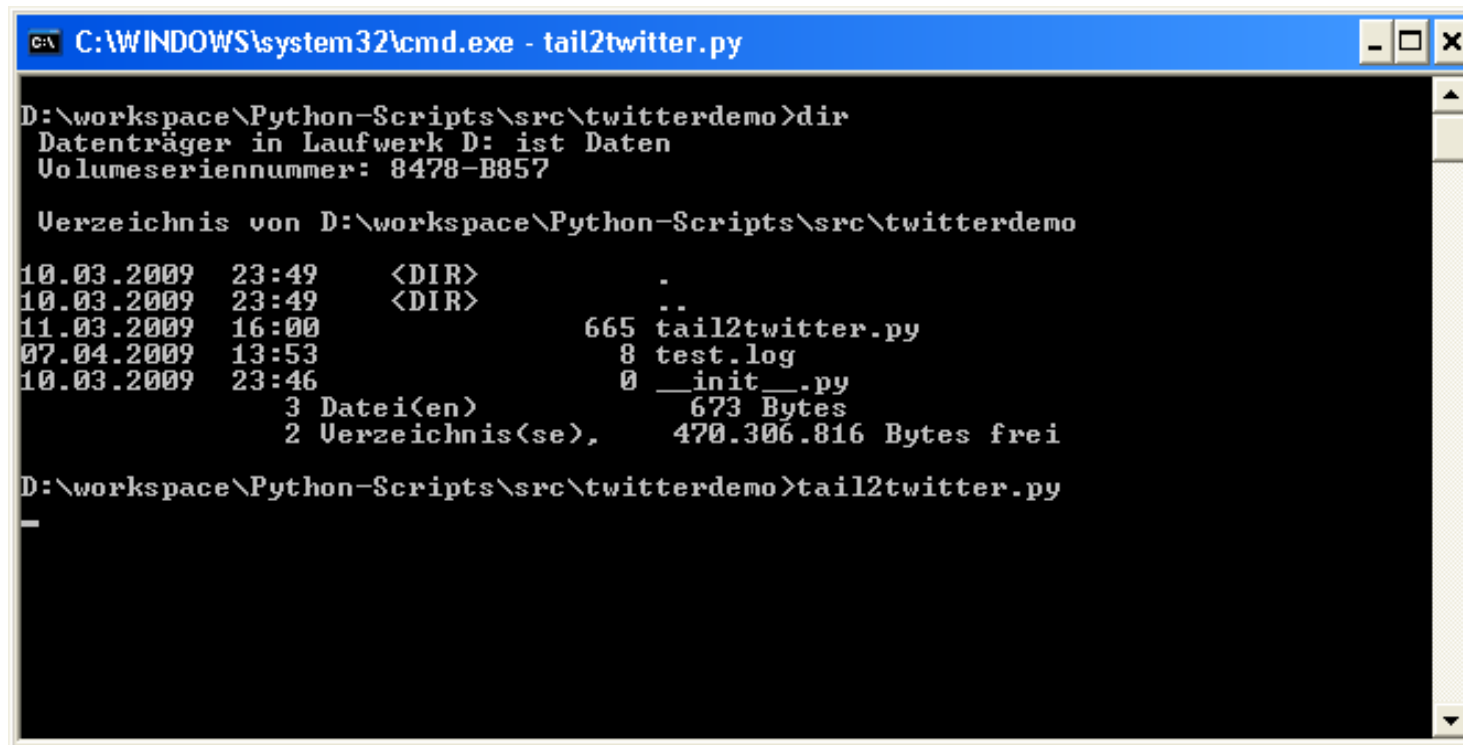
file = open('test.log', 'r')

# ... <Find the size of the file and move to the end>

while 1:
    where = file.tell()
    line = file.readline()
    if not line:
        time.sleep(1)
        file.seek(where)
    else:
        api.PostUpdate(line)
```

# Example

## „tail -f“ to Twitter



```
C:\WINDOWS\system32\cmd.exe - tail2twitter.py

D:\workspace\Python-Scripts\src\twitterdemo>dir
Datenträger in Laufwerk D: ist Daten
Volumeseriennummer: 8478-B857

Verzeichnis von D:\workspace\Python-Scripts\src\twitterdemo

10.03.2009  23:49    <DIR>          .
10.03.2009  23:49    <DIR>          ..
11.03.2009  16:00             665 tail2twitter.py
07.04.2009  13:53              8 test.log
10.03.2009  23:46              0 __init__.py
              3 Datei(en)             673 Bytes
              2 Verzeichnis(se), 470.306.816 Bytes frei

D:\workspace\Python-Scripts\src\twitterdemo>tail2twitter.py
-
```



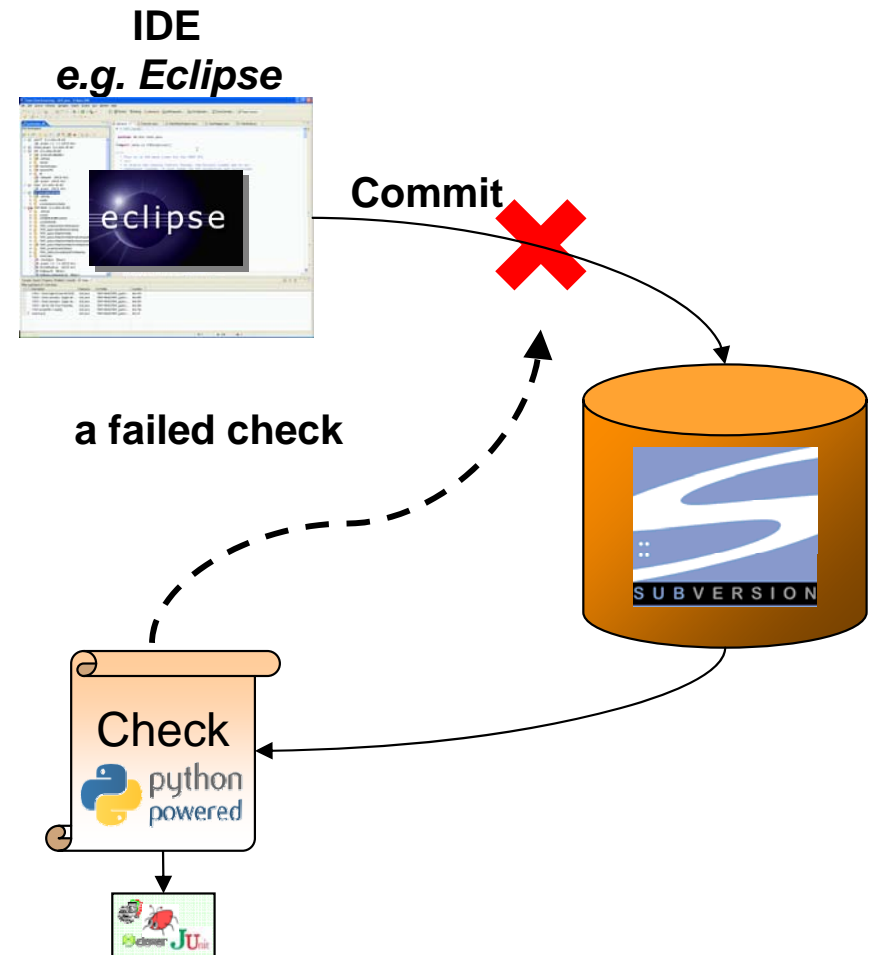
# Demo

## Twitter in Software Engineering

### Notifications from SVNChecker

<http://svnchecker.tigris.org/>

- Checks on source code
  - Coding Style
  - Source code analysis
  - Access rights
  - automated test & build results
- Notification of results
  - Commit and other messages
  - E-Mail, Log file, data bases, RSS feeds, **Twitter**





# Demo

## Twitter on Smart Phones

- The Twitter libraries work on S60 phones with PyS60
- Example: Posting incoming SMS messages to Twitter account

```
import sys
sys.path.append("e:\\Python")
# PyS60
import appuifw, e32, inbox
# Twyt
from twyt import twitter

box = inbox.Inbox()
box.bind(message_received)
print "Waiting for new SMS messages..."
appuifw.app.exit_key_handler = quit
app_lock = e32.Ao_lock()
app_lock.wait()
```



## Demo

### Posting incoming SMS messages to Twitter account

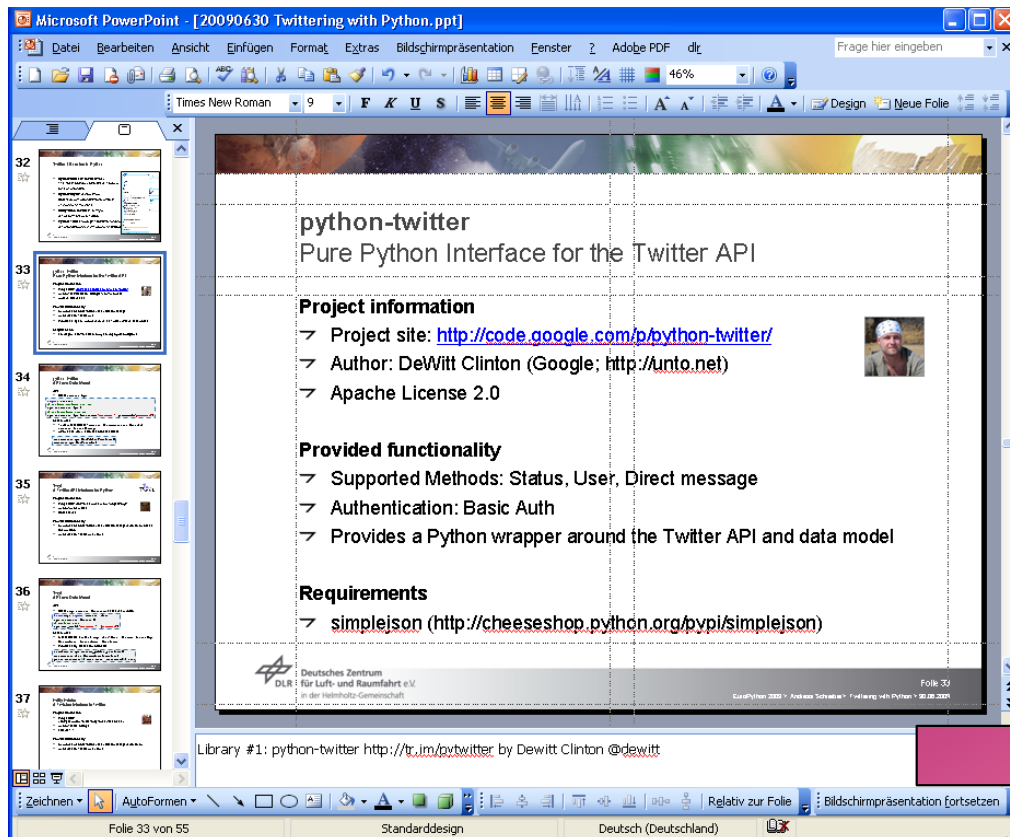
➤ Message evaluation: post SMS as Twitter message

```
def message_received(msg_id):  
    box = inbox.Inbox()  
    sms_text = box.content(msg_id)  
    appuifw.note(u"SMS content: " + sms_text , "info")  
    api = twitter.Twitter()  
    api.set_auth('python_demo', '*')  
    api.status_update(sms_text)  
    app_lock.signal()
```

# Demo

## Twitter in PowerPoint

- Twitter message on every PowerPoint `onSlideShowNextSlide` event
- The speaker note will be the message, if existing





# Twitter in PowerPoint

## Implementation using Python's win32com (1)

➤ Event handler for PowerPoint

```
import twitter
api = twitter.Api(username='python_demo', password='*')

class EventManager(object):

    def OnSlideShowNextSlide(self, Wn):
        i = powerpoint.ActivePresentation.
            SlideShowWindow.View.Slide.SlideIndex
        for shape in powerpoint.ActivePresentation.
            Slides[i-1].NotesPage.Shapes:
            if shape.TextFrame.HasText:
                notes = shape.TextFrame.TextRange.Text
                api.PostUpdate(notes)
```





# Twitter in PowerPoint

## Implementation using Python's win32com (2)

➤ Dispatch PowerPoint with event handler and listen for events

```
from win32com.client import DispatchWithEvents
powerpoint = DispatchWithEvents('PowerPoint.Application',
                                EventManager)

powerpoint.Visible = 1


# Listen for events
import threading, pythoncom
stopEvent = threading.Event()
while True:
    pythoncom.PumpWaitingMessages()
    stopEvent.wait(.2)
    if stopEvent.isSet():
        stopEvent.clear()
        break
```

# Demo

## Twitter Notification from MoinMoin Wiki

### ➤ Twitter handler for the *MoinMoin Event System*



The screenshot shows the MoinMoin Wiki FrontPage. At the top, there's a navigation bar with links like 'RecentChanges', 'FindPage', 'HelpContents', and 'FrontPage'. Below this, a message says 'Thank you for your changes. Your attention to detail is appreciated.' and 'Notifications sent to: python\_demo'. The main content area is titled 'Python Wiki' and contains a list of 'Interesting starting points' with links to 'RecentChanges', 'WikiSandBox', 'FindPage', and 'HelpOnMoinWikiSyntax'. Below this is a section 'How to use this site' with instructions on editing and creating links. At the bottom, it says 'This wiki is powered by MoinMoin.' and 'MoinMoin Powered Python Powered GPL licensed Valid HTML 4.01'.

python-twitter



The screenshot shows a Twitter notification. The notification text says 'Page changed: <http://localhost:8080/Front...>' and '2 minutes ago from web'. Below the text is a profile picture of a Python logo and the name 'python\_demo' with the bio 'Python Demo'. The background of the notification is blue with the text 'europvtho' at the bottom.

# Questions?

## Contact

[\*\*http://tr.im/schreiber\*\*](http://tr.im/schreiber)

[\*\*twitter.com/onyame\*\*](https://twitter.com/onyame)

[\*\*python@dlr.de\*\*](mailto:python@dlr.de)

